10/09/13

Agenda

- Opener

- Section 2.4 - Equations with variables on both sides

- Exit Slip

Homework p. 105-108 (14-36 evens, 58)

Opener: Discuss with your teammates!

Please do NOT call out answers, just discuss!

Two students solved the following problem. One made a mistake, the other did not. Which student's answer is correct? What error did the other student make?

General admission tickets to the fair cost $2.25 per person. Ride passes cost an additional $4.75 per person. Parking costs $8 per car. How much does it cost a family of 4 to go to the fair?

Steve's Answer:

$$4(2.25 + 4.75) + 8 = x$$
$$4(7) + 8 = x$$
$$28 + 8 = x$$
$$36 = x$$

It cost $36

Bill's Answer:

$$4(2.25 + 4.75) + 8 = x$$
$$9 + 4.75 + 8 = x$$
$$14.75 + 8 = x$$
$$22.75 = x$$

It cost $22.75

Section 2.4 day 1 - Solving Equations with variables on both sides
Target 2B

Goal:	Solve equations with variables on both sides of the equal sign.
Essential Understanding:	To solve equations with variables on both sides, you use the properties of equality and inverse operations to write a series of similar equations.

Compare & Contrast: (discuss with you teammates)
What is different? What is the same?

How could you go about solving this equation?

SAME

VARIABLES

ANSWERS POSITIVE

$5x-4=21$

$5x+2=2x+14$

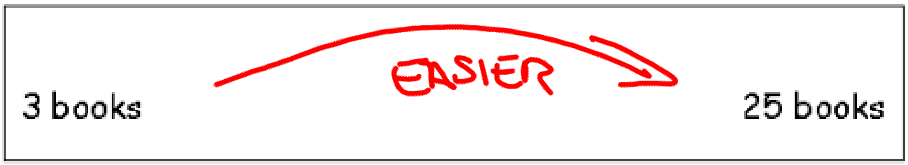
DIFFERENCES

VARS. ON BOTH SIDES

10/09/2013 Section 2.4 Day 1 Target 2B

Solving equations with Variables on both sides

Look at the following scene:



All the books need to be on one side of the room to win the prize, how can this be accomplished?

Is one way better than the other?

Solving Equations with Variables on Both Sides

$7k + 2 = 4k - 10$

$k = -4$

$7(-4) + 2 = 4(-4) - 10$

$-26 = -26$

$7k + 2 = 4k - 10$

$-4k \quad -4k$

$3k + 2 = -10$

$-2 \quad -2$

$3k = -12$

$\frac{3k}{3} = \frac{-12}{3}$

$k = -4$

Remember!
Distribute,
Combine like terms,
Move variable to one side or the other,
Reverse Order
Of Operations
Etc.

Check your answer

1. $3x + 4 = 5x - 10$

$-3x \quad -3x$

$4 = 2x - 10$

$+10 \quad +10$

$\frac{14}{2} = \frac{2x}{2}$

$7 = x$

2. $5x + 2 = 2x + 14$

$-2x \quad -2x$

$3x + 2 = 14$

$-2 \quad -2$

$\frac{3x}{3} = \frac{12}{3}$

$x = 4$

3. $5x - 5 = 2(2x + 1)$

$5x - 5 = 4x + 2$

$-4x \quad -4x$

$x - 5 = 2$

$+5 \quad +5$

$x = 7$

4. $6x - 4 = 3x + 2$

$-3x \quad -3x$

$3x - 4 = 2$

$+4 \quad +4$

$\frac{3x}{3} = \frac{6}{3}$

$x = 2$

5. $2(5x - 1) = 3(x + 11)$

$10x - 2 = 3x + 33$

$-3x \quad -3x$

$7x - 2 = 33$

$+2 \quad +2$

$\frac{7x}{7} = \frac{35}{7}$

$x = 5$

6. $3(x - 5) = 2(x + 5)$

$3x - 15 = 2x + 10$

$-2x \quad -2x$

$x - 15 = 10$

$+15 \quad +15$

$x = 25$

Summary-

When we have variables on both sides, the first step is to get them all to one side. It usually is easiest to move the smaller one. Then we solve just like two-step and multi-step equations.

When we have word problems, try to write the equations for the situations first before you begin to solve.